Solving the Puzzle of Healthcare Innovation
Stanford’s Transformation Journey Towards Innovation

Amanda Chawla
VP of Supply Chain
About Stanford

Acute Care: 300P, 500P, Packard West, Packard Main & Valley Care
Academic Medical Center, Children’s Hospital, Level 1 Trauma center
Supply Chain serving seven legal entities
Non-Acute: 115+ Supply Chain managed offsite locations

Supply Chain is a Shared Service that supports Stanford Health Care (SHC), Lucile Salter Packard Children’s Hospital (LPCH), Stanford Blood Center (SBC) and some services to Valley Care Hospital (VC), University Healthcare Alliance (UHA) and Packard Children’s Health Alliance (PCHA), and School of Medicine (SOM).
• 8 Nobel Prizes in Life Science / Medicine
• Breakthroughs in genetic / DNA modeling
• Stem cell identification and new treatment approaches
• First Linear Accelerator for cancer radiation treatment
• Development of the Cyberknife for stereotactic radiosurgery
• Pioneering cardiac surgery with the U.S.’ first heart transplant and the world’s first heart-lung transplant
• Development of balloon angioplasty approaches
• Groundbreaking cancer treatment through the use of monoclonal antibodies
• Innovations in imaging diagnostics and treatment modalities
• Minimally invasive brain tumor surgery
Supply Chain 1.0 to X.0

Level of Difficulty

- Transformative
- Value Driven
- Highly Reliable-Scalable Enterprise
- Technologically Based
- Intelligence

Time
Integrated Strategic Plan

Stanford Medicine Strategic Initiatives

Value Focused
- New Stanford Hospital (500P)
- Patient Experience
- Efficiency and Effectiveness
- Quality
- Health Plan
- People Development
- Service Line Performance
- Ambulatory Network Optimization
- Market Development
- Patient Access
- Lean Transformation
- Packard 2.5 & 3.0
- Magnet Designation

Digitally Driven
- Digital Health Care Delivery
- Innovative Technology
- Digital Learning
- Industry and Health System Partnerships

Uniquely Stanford
- Global
  - Stanford University LRP, Health and Life
  - MD Discovery Curriculum
  - PhD Student Funding
  - Applying Precision Health
  - Leading the Biomedical Revolution
  - New Thought Leadership Initiatives
  - Johnson Center Strategic Refresh

In 2025....

#1 in California

Accelerate the translation of discovery to practice

Attract and educate a diverse group of future leaders

Serve our regional community through our Precision Health ecosystem
## Taking ISP & Applying To Supply Chain

<table>
<thead>
<tr>
<th>Know</th>
<th>Believe</th>
<th>Do</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Strive to be industry leader</td>
<td>- Uniquely Stanford</td>
<td>- Order with confidence</td>
</tr>
<tr>
<td>- Unified Supply Chain</td>
<td>- Reliable</td>
<td>- Partner with Supply Chain as a partner</td>
</tr>
<tr>
<td>- Drive to be Digitally driven</td>
<td>- Precise</td>
<td>- Advocate services</td>
</tr>
<tr>
<td>- Customer-focused</td>
<td>- Efficient</td>
<td>- Rate Supply Chain Services High</td>
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<tr>
<td>- Value-focused</td>
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<tr>
<td>- Desire Skilled workforce</td>
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<tr>
<td>- Clinician collaborators</td>
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<tr>
<td>- Problem solvers</td>
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<td>- Contribute to continuity of care</td>
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- Leadership & Staff Exercise
To be A Top Healthcare End to End Supply Chain Organization Across:
(1) Strategic Sourcing
(2) Clinically Integrated
(3) Operational Excellence

With a Commitment To Value:
Q: Adopting best practices with an investment in technological advancements,

S: Providing efficient and quality care by ensuring the right item at the right time at the right place, and right manner

C: Reducing costs through variation reduction to patient outcomes and maximizing enterprise Sourcing value

E: Committing to a strong alignment with our employees, partners, clinicians, and stakeholders

Matching the Clinical Excellence with Supply Chain Excellence
Internal Branding Campaign

Artifacts with Purpose On All Communications:

Tag Line (Supply Chain Experience):


Mission & Vision Graphic Integration:
Assessment & Blueprint

- The functional responsibilities - SWOT
  - Sourcing, Logistics & Operations, Systems & Analytics, Ambulatory & Inpatient

- Lack of Operational Alignments between each hospital

- Consider central vs. local execution and governance

- Need to achieve scale and drive standard work

- Need Single Policy & Process owners

- Establish a model that allows for enterprise growth and expansion

- Organizational Culture & Leadership

- ISP, Vision & Pillars (Strategic Sourcing, Clinically Integrated & Operational Excellence)
Future State Principles

• Clinically Integrated: Service Line Management and Direct Management
  • Dyad-Partners with Leadership across the Enterprise

• Single Logistics & Distribution Function
  • Insourcing & Re-Design

• Maximize resource efficiency & leadership

• Single Source Owner per Supply Chain Process

• Balance of decision making through a inter-connected Supply Chain

• Defined functions with the development of an inter end-to-end Supply Chain
### Functional Design → Clinically Aligned Structure

<table>
<thead>
<tr>
<th>Sourcing</th>
<th>General Nursing</th>
<th>Procedural</th>
<th>Regional</th>
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</thead>
<tbody>
<tr>
<td><strong>Policy &amp; Process Owners</strong></td>
<td><strong>Centrally Governed</strong> – supporting Master Data Management, Purchasing &amp; Category Management across all entities</td>
<td><strong>All JIT Supply Management across all Nursing, ED, and Ancillary Floors Across Hospitals.</strong></td>
<td>All Interventional, Operating Rooms Across Hospitals. One Asset Center</td>
</tr>
<tr>
<td><strong>DATA GOVERNANCE</strong></td>
<td><strong>DEMAND PLANNING</strong></td>
<td><strong>ASSET MANAGEMENT</strong></td>
<td><strong>RECEIVING</strong></td>
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<td><strong>SUPPLIER RELATIONS</strong></td>
<td><strong>LINEN</strong></td>
<td><strong>CASE CART</strong></td>
<td><strong>MAIL</strong></td>
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<tr>
<td><strong>PROCUREMENT</strong></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><strong>CNO TEAM</strong></td>
<td><strong>CMO OFFICE</strong></td>
<td><strong>AMBULATORY</strong></td>
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<tr>
<td><strong>SUPPLIERS</strong></td>
<td><strong>ANCILARIES</strong></td>
<td><strong>PERIOPERATIVE</strong></td>
<td><strong>PHYSICIAN PRACTICES</strong></td>
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<tr>
<td><strong>EXECUTIVES - NLS</strong></td>
<td></td>
<td><strong>INTERVENTIONAL</strong></td>
<td></td>
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<tr>
<td><strong>CLINICIANS - VBS</strong></td>
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<tr>
<td><strong>FINANCE &amp; BUSINESS</strong></td>
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</table>

**Partners**

- **SUPPLIERS**
- **EXECUTIVES - NLS**
- **CLINICIANS - VBS**
- **FINANCE & BUSINESS**

**Owners**

- **CNO TEAM**
- **CMO OFFICE**
- **PERIOPERATIVE**
- **INTERVENTIONAL**

**Infrastructure**

- **RECEIVING**
- **MAIL**
- **AMBULATORY**
- **PHYSICIAN PRACTICES**
I.E. – Regional Model

Sourcing Supply Chain Services

SHC & LPCH Inpatient Supply Chain

Main Hospital Campus
- 300 P
- 500 P
- LPCH 2.0
- 900 Blake Wilbur
- LKS

Regional Supply Chain Services

Hub Model

Level 1

Desktop Delivery Model

Direct from Distributor

Level 2

Non-Clinical Building

Level 3

South Bay Region
Stanford Campus Region
East Bay Region
Peninsula Region

Level 4

Regional Warehouse/ Cross- Dock

“One Stop Shop”

Medical Supplies
Off Campus Mail Distribution
Linen
Instruments
Inter-departmental pharmaceutical
Non-Medical Supplies

Infrastructure
Leadership & Partnership—Recruit, Retain & Engage

**Understand**

- Supply Chain Leadership Strengths

**Connect**

- Check-In Submission Frequency
  - Team Members Not Playing: 0%
  - Team Members Playing:
    - Monthly: 0%
    - Bi-Weekly: 63%
    - Weekly: 37%

**Structure**

- Culture & Collaboration

**Measure Frequently**

- Results - 98% participation

- % Fully Engaged:
  - USA: 19%
  - Time 1 (n = 164): 31%
  - Time 2 (n = 164): 42%
  - Time 3 (n = 248): 46%
**BABY FEVER**

- **Patrick Lu**, Supervisor Dock Services and his wife had a son on February 23.
- **Brian Galitz**, Manager Surgical Materials, and his wife had a girl on March 7.
- **Vignesh Rajagopal**, Assistant Director CM, and his wife had a girl on March 19.

**GENERAL SUPPLY DISTRIBUTION**

What a busy month! All 2,095 items in Central Supply (1005) have been reorganized by supply category to match the in-patient floors, and optimized for supply levels. Over 20 Respiratory Therapy specific items have also been added to the inventory to increase supply reliability. This was a true team effort with support from every shift.

500P Bedside carts went live this month in E2 Extension to support both Nursing and Supply Chain getting ready for new carts and process in 500P. 01 and the remainder of 2 are scheduled to go live in April and May. Nearly 29 items were removed from the original carts to reduce waste.

Demand Planning has converted the last two in-patient units to the two-bin KanBan system (B1&B3)!! Since taking the KanBan conversion responsibilities from BlueBin there has been a major decrease in walk-ups post go-live. The SHC RT Main Supply Room has been completely reoptimized and converted to KanBan in preparation for 500P.

This was a major project that took over a month to complete with nearly 200 items touched. The SHC RT Satellites rooms are in progress, 2 out of 3 have been completed with the 3rd one scheduled to be completed by March 22, 2019. Demand Planning has also expanded their team, with the promotion of 2 internal teammates to the Inventory Control Coordinator role. Congratulations Gabe and Rizza!
Partnerships

**Voice of the Customer**
- Shared Huddles
- Survey, Presence, Share - Visibility

**Our Employees**
- Huddles, Semi-annual All Hands Town Hall, Quarterly SC Leadership All Hands
- Front Line Administered Newsletter – The Source

**Clinical & Physician Alignment**
- Joint Grand Rounds – “SC Integration w/Clinical Decision Making – The Roadmap”
- Value Based Selection Re-Design (MD Led)
- Clinical Service Reinvestment Program

**Executive Alignment**
- Structure, huddles, presence
- Weekly Exec. Meetings
- Monthly SC Governance w/Clinical & Operational Leaders

**Business Relations**
- Finance/SC Lead Monthly Business Management Forums
- Procure to Pay Program; a shared intake & processing center

**Partnerships**
- University: Leverage talent → Analytics Mapping
- Upcoming – All Hands Stanford Supplier Summit
Stanford’s Operating System

TIME

OUTCOMES

Kaizen – Continuous Improvement

Standard Work Created

Standard Stable Process

Innovation

Standard Work Created

Standard Stable Process

Kaizen – Continuous Improvement

Standard Work Created

Standard Stable Process
Three Fundamentals...

- Sequence of Daily Activities
- Auditing of work Processes
- Gemba
- Voice of the Customer

Leadership Standard Work

Team Huddles

- Real Time, root cause problem solving with countermeasures
- Interdepartmental collaboration

Visual Management

- Alignment with enterprise wide goals and objectives
- Huddle board with actionable metrics
Reliability & Daily Huddle Structure Optimization

**Essential Few**
Focus & Alignment

- Metric Reporting
- Day to Day Management
- Escalations Hot Topics/Metrics

**Cascade Up & Down**
Daily Huddle Management

- **Tier 1**: Supervisor & Front Line teams
- **Tier 2**: Division Based: Managers & Asst. Managers
- **Tier 3**: Admin Director & Directors
- **Tier 4**: C suite, VP, Executive Dir.

**Evolution**
Continuous Improvement

Evolution Brain Image
Reliability & Daily Huddle

Structure Optimization

**T1 + T2**

<table>
<thead>
<tr>
<th>Workstation</th>
<th>Name</th>
<th>Quantity</th>
<th>Quality</th>
<th>Reliability</th>
<th>Tuesday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1 - Assembly Line 1</td>
<td>J Salmon</td>
<td>0</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>T2 - Assembly Line 2</td>
<td>K. Ross</td>
<td>0</td>
<td>5</td>
<td></td>
<td></td>
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**Daily Huddle**

- **Reliability**
  - 100% on-time delivery
  - 95% quality control

- **Daily Huddle**
  - Summary of daily status and updates

**Structure Optimization**

- Improvement in assembly time by 20%
- Reduction in material waste by 30%

**T3**

<table>
<thead>
<tr>
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<th>Name</th>
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<th>Quality</th>
<th>Reliability</th>
<th>Tuesday</th>
<th>Friday</th>
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</thead>
<tbody>
<tr>
<td>T3 - Assembly Line 3</td>
<td>L. Thompson</td>
<td>0</td>
<td>5</td>
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</tbody>
</table>

**Primary Column**

- **Monday**
  - Safety Incident: On-site
  - Safety Incident: Off-site

- **Tuesday**
  - Safety Incident: On-site
  - Safety Incident: Off-site

- **Wednesday**
  - Safety Incident: On-site
  - Safety Incident: Off-site

- **Thursday**
  - Safety Incident: On-site
  - Safety Incident: Off-site

- **Friday**
  - Safety Incident: On-site
  - Safety Incident: Off-site
Process Reliability

Walk-Up Deliveries
Average walk-up delivery times have decreased by 23%

Cycle Count Accuracy
Cycle Count Accuracy has drastically improved by over 25%

Walk-ups
Walk Ups continue to decrease – 43% Reduction Incredible improvements to Supply Reliability

Process Reliability

Value Based Selection Re-Design & Evolution
• MD Led, MD Owned, Supply Chain - Supportive Arm
• Treatment models & benchmarks that link price & utilization

Process Owners & A Single Intra-Supply Chain
• Horizontal & Vertical responsibilities; matrixed
• Logistics – i.e. standardized par management playbook
• Master Data Management – System Evolution & Day to Day (Helpdesk)

Helpdesk within Supply Chain – Service Now as Ticketing System
• Intra-Supply Chain: Handoff’s & Coordination

Standard Work & Leaders as Teachers Program
• Escalation Responses – SBAR
• A3’s
• Process Improvement Initiative Requirements & Standard
Utilizing Technology

Demand Planning & Forecasting
- Kanban Playbook & Standards
- Custom built tools that are a push system
- Single points of entry driving reliability/accuracy
- Visibility in the key drivers and metrics – at the executive, service line, operating model level

Voalte Communications
- Communication driving orders → Asset Inventory

Autonomous Vehicles
- Implemented for Support Services – deliver of linen, equipment, surgical case carts, supplies, food trays, etc.
- 28 TUGS
RFID – Inventory Management

- Automation of Logistics & Distribution – driving re-ordering
  - Visual ques – removing the hunting and gathering of supply chain
- Phased planning
  - Interventional Platform – chargeable
  - All Kanban Bins – Acute Care
  - Level 4 Clinics – Non Acute
  - Tagging and visibility with distribution

Data-Driven Intelligence

- Holistic governance approach – Master Data Management
  - Data Sources, Analytics & Tools
Results

Annual Board Report - 2018

Success All Along Our Supply Chain

We achieved savings across the enterprise through concentrated efforts in multiple areas: Non-Medical, Medical, Pharmaceutical, Clinical Savings Reinvestment Program, Value-Based Selection, Improved Inventory Controls and Demand Planning plus Improved Clinical Pathways.

This work has resulted in a move of $XMM of our purchases to the lowest price paid in the nation (BCRI Benchmarking). Stanford’s Price Competitive Index (PCI) is elevated 4% above the Academic Medical Centers average and has improved by 3 points (Vincent Benchmarking).

Numerous enterprise-wide negotiations and enhanced contract relationships, for example, Stanford’s new enterprise-wide agreement with a group purchasing organization (GPO), have resulted in aligned resource support from our suppliers.

In partnership with our physicians, Stanford has improved average reimbursement for spine procedures, which results in improved rates.

Finance Accounts Payable and Supply Chain have made significant progress from Procure to Pay with improved results, clearing back-log cognizable invoices within an exception ratio greater than 90 days (resulting in a 20% decrease). Implementation of OC Technology, the launch of a monthly business operations forum, and implementation of a Self-Service Receiving Program...

Supply Chain has made impressive contributions in our value journey in pricing, service, and reliability. We have reduced call backs for unscheduled supply needs (break-up 25%: Clinical Nursing, IT, Unplanned, and Ancillary) with the services of Supply Chain has improved 19%. The number of items not available in the asset inventory: Supply Chain has increased 19%.

These improved efficiencies across the entire value stream occurred through ongoing efforts with the development of unit-based teams. Through the year there was significant growth (over $XMM) in more transactions annually, numerous activations (such as Packard Hospital) and technological advancements with the implementation of our IFRO-based inventory management system, which has been planned for expansion into the institutional platform at WCCM.

FY18 ACHIEVEMENTS

- $41.5MM
- Non-Labor Spend Savings

OPTIMIZED SUPPLY CHAIN LOCATIONS:

Lankenau Medical Center Stanford Hospital LPCH
Challenges

• Speed, execution & sustainability

• Fixing the basics & Innovation….building and flying in tandem

• Constant Change Management, Stakeholder Relationship Management

• Independent Technologies and Systems
  • Data Rich, Analytics Poor

• Lack of intellect/understanding the complete Supply Chain; i.e.
  • Material level → Mnf. → Supplier → Procurement → Utilization

• Ultimately the fine balance to Quality, Cost, Efficiency to Patient Outcomes
In Conclusion...keep evolving

Lots of options...

Reject the ones that don’t work

Keep the ones that do
Solving the Puzzle of Healthcare Innovation